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Office of Technical Assistance
Executive Office of Environmental Affairs
Commonwealth of Massachusetts

Toxics Use Reduction Success Story

WATER AND INK WASTE REDUCTION AT F.C. MEYER COMPANY

SUMMARY

F.C. Meyer Company, a Lawrence, Massachusetts cardboard box manufacturer and printer, has trained its employees in "good housekeeping" practices and significantly reduced ink wastes and wastewater generated when cleaning the printing presses. The improved washing practices include draining and scraping as much ink as possible before washing and minimizing the amount of water used. Most of the ink wash water is now used to dilute concentrated virgin black ink. The decrease in wash water and the reuse of ink wastewater have resulted in a 90 percent savings in waste disposal as well as reduced costs for raw materials.

BACKGROUND

F.C. Meyer employs 200 people and operates eight printing presses three shifts a day, five days a week. The company uses a flexographic printing process with rubber printing plates.

In 1989, F.C. Meyer switched from solvent-based inks to water-based inks, and reduced its VOC emissions from 280 tons per year to less than 1,000 pounds per year. Performance quality was unchanged and the regulatory workload was reduced substantially. In 1992, F.C. Meyer began to seek further waste reduction opportunities and looked at the press cleaning procedures. Presses must be cleaned every time the ink is changed. The bulk of the ink contained in the bins and on other parts of the press is poured back into the ink container. The remaining ink was washed off with water-soaked rags and the waste water was put in 55 gallon drums and, before the ink change, taken away by a hazardous waste contractor at $100 per drum. Before implementation of the waste reduction program the company generated 10 drums of hazardous waste a week, now it generates one to two drums a week of nonhazardous waste.

WASTE REDUCTION ACTIVITIES

F.C. Meyer decided that reduction of the volume of water used in cleaning process could be achieved by training workers to use the least amount of water possible. The new washing procedures

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include draining as much ink as possible back into the containers and thorough scraping of excess ink off the press parts before any water is added, and then using as little water as possible.

In addition to reducing the volume of wash water used, the company asked its supplier to deliver black ink with 10% reduced water content. Wastewater is added to the black ink with no apparent effect on the color quality of the ink. The wastewater can also be added to other colors, such as grey, in smaller amounts than when added to black ink.

Reductions Achieved: Modifying the press cleanup procedure reduced the solids in spent washwater from more than 30 percent to 13 percent. The volume of water used also has decreased by 35 percent. Approximately one pint of water is now used each time a press is washed.

By reusing most of the washwater, the amount of waste which had to be disposed has decreased from ten to one to two 55-gallon drums per week.

Economics: The 55 gallon drums of waste cost approximately $100 each to dispose. Implementing the reuse of ink wastewater has reduced the yearly cost of waste disposal from about $52,000 to $5,200.